

REMARKS

In the Office Action dated December 22, 2006, claims 1, 3-5, 7-21 and 23-30 are pending. Claims 1, 3-5, 7, 8, 11-13, 16-21 and 23-30 were rejected. Claims 9, 10, 14, and 15 were objected to.

Claims 1, 9, 11, 14, 19, 20, and 27 have been amended. Claim 3 has been cancelled. No claims have been added. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. Applicants submit that the amendments do not add new matter.

Rejections Under 35 U.S.C. §102

Claims 1, 3-5, 7-8, 11-13, 16-21, and 23-30 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,636,976 of Grochowski, et al. ("Grochowski").

Applicants have amended claim 1 to include a digital throttle to estimate a power state, responsive to activity of the execution pipeline and the current operating point, and to trigger a change in the operating point, responsive to the estimated power state reaching a first threshold, wherein the digital throttle comprises an activity monitor to estimate an activity level responsive to a signal from the clock gating circuit, the activity monitor including a scaling unit to scale the estimated activity level according to the current operating point.

Grochowski discloses a mechanism to control changes of current (dI/dt) that is supplied to a microprocessor. More specifically, Grochowski discloses:

Monitor circuit 320 collects signals from gate units 130 over a sequence of clock cycles and determines a current change rate from the collected signals. For one embodiment of digital throttle 130, monitor circuit 320

includes weight units 314(l)-314(n) (generically, weight units 314), an adder 322, an n-stage shift register 324, an estimation circuit 326, and a threshold comparator 328. When present, each weight unit 314 provides 0 or a non-zero value to adder 322 according to whether the activity state indicated by gating circuit 310 for its associated functional unit 124' is inactive or activate, respectively. The non-zero value represents the current drawn by functional unit 124' if it is activated. Adder 322 and weight units 314 are unnecessary if CCU 130 controls a single functional unit 124'. If currents drawn by monitored functional units 124' are roughly comparable, weight units 314 may be eliminated.

(Grochowski, col. 5, lines 50-61)(emphasis added)

In particular, Grochowski discloses:

Adder 322 sums the (weighted or unweighted) activity states of selected functional units 124' on each clock cycle to determine a total activity state. The total activity level is provided to a corresponding input of n-stage shift register 324. Shift register 324 stores total activity states (weighted or unweighted) for each of n-successive clock cycles to provide a profile of current consumption over n-cycles of the processor clock. Estimator circuit 326 uses the n-stage data to generate an estimate of the current change, and threshold comparator 328 compares the estimated current change with one or more threshold values. If the estimated current change exceeds the threshold value(s), throttle circuit 330 adjusts the activity level of processor 110.

(Grochowski, col. 5, line 65-col. 6, line 11)(emphasis added)

Thus, Grochowski merely discloses the throttle circuit that adjusts the actual activity level of processor according to the estimated current change. In contrast, amended claim 1 refers to a scaling unit to scale the estimated activity level according to the current (actual) operating point of the processor.

Because Grochowski fails to disclose all limitations of amended claim 1, applicants respectfully submit that amended claim 1 is not anticipated under 35 U.S.C. § 102(e) by Grochowski.

Given that claims 4-5, 7-8, 11-13, 16-21, and 23-30 contain similar limitations, applicants respectfully submit that claims 4-5, 7-8, 11-13, 16-21, and 23-30 are not anticipated under 35 U.S.C. § 102(e) by Grochowski.

ALLOWABLE SUBJECT MATTER

Applicants note with appreciation the Examiner's allowance of the claims 9-10 and 14-15, if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants have amended claims 9 and 14 in light of the Examiner's suggestion.

CONCLUSION

In view of the foregoing, Applicant respectfully submits the present application is now in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (408) 720-8300.

Applicant hereby petitions for an extension of time to respond to the pending Office Action, and a check for the extension fee is enclosed.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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Tatiana Rossin
Reg. No. 56,833

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025-1026
(408) 720-8300